

Amendments of the Claims:

A detailed listing of all claims in the application is presented below. This listing of claims will replace all prior versions, and listings, of claims in the application. All claims being currently amended are submitted with markings to indicate the changes that have been made relative to immediate prior version of the claims. The changes in any amended claim are being shown by strikethrough (for deleted matter) or underlined (for added matter).

1. (Currently Amended) A real-time control system having a fixed loop time, comprising:

an input having a frequency ranging both above and below the fixed loop time;

and

~~a method for utilizing information provided by a pulse wheel and sensed by a sensor,~~

~~comprising the steps of:~~

~~providing~~ a rotating shaft;

~~providing~~ a pulse wheel rigidly affixed onto the rotating shaft; and

~~providing~~ a sensor sensing an plurality of information pulses out of the pulse wheel,

wherein the sensed information pulses comprise a first information pulse and a second information pulse; ~~and~~

wherein when ~~at the~~ rotating rate of the rotating shaft is greater than a predetermined value, ~~averaging~~ at least the first information pulse and the second information pulse are averaged ~~two pulses wherein one of the at least two pulses being related to the first information and at least one pulse being related to the second information;~~ such that the first information pulse and the second information is used along with the first information pulse accurately represent the plurality of information pulses in a variable cam timing measurement system ~~for a more accurate representation of the information.~~

2. (Currently Amended) The method of claim 1, further comprising a controller, which processes the information pulses at a predetermined sampling rate, wherein the first

information pulse comprises information relating to the pulse wheel, and the first
information pulse provides~~which is sequentially the most recent~~latest information
~~disposed~~ to be processed by the controller.

3. (Currently Amended) The system~~method~~ of claim 1, further comprising a controller, which
processes the information pulses at a predetermined sampling rate, wherein the second
information pulse comprises information relating to the pulse wheel, and the second
information pulse provides information which is sequentially not the most recent~~latest~~
information ~~disposed~~ to be processed by a~~the~~ controller, but occurs prior in time to the
most recent~~latest~~ information.
4. (Cancelled)
5. (Currently Amended) The system ~~method~~ of claim 1, wherein the first information pulse
providesis phase angle information sensed by the sensor out of the pulse wheel.
6. (Currently Amended) The system ~~method~~ of claim 1, wherein the second information pulse
providesis phase angle information sensed by the sensor out of the pulse wheel.
7. (Currently Amended) The system~~method~~ of claim 1, wherein the rotating shaft is a cam-shaft
of an internal combustion engine.
8. (Currently Amended) The system~~method~~ of claim 1, wherein the rotating shaft is a crank
shaft of an internal combustion engine.
9. (Currently Amended) The system~~method~~ of claim 1, wherein the pulse wheel comprises a
wheel having teeth distributed thereon.
10. (Currently Amended) A method for utilizing information provided by a pulse wheel and
sensed by a sensor, comprising the steps of:

providing a rotating shaft;

providing a pulse wheel rigidly affixed onto the rotating shaft;

~~providing a sensor sensing a plurality of~~ information pulses out of the pulse wheel, wherein the sensed information pulses comprising a first information pulse and a second information pulse and a sensor senses the information pulses;

~~providing a controller controlling or processing the sensed information pulses~~ out of the pulse wheel at a predetermined sampling rate, wherein a controller processes the information; and

~~when the rotating rate of the rotating shaft is greater than a predetermined value,~~
averaging at least the first information pulse and the second information pulse
~~at least two pulses when a rotating rate of the rotating shaft is greater than a predetermined value,~~
wherein one of the at least two pulses being related to the first information and at least one pulse being related to the second information;
such that the first information pulse and the second information is used along with the first information pulse accurately represent the plurality of information pulses in a variable cam timing measurement system
~~for for a more accurate representation of the information.~~

11. (Currently Amended) The method of claim 10, wherein the first information pulse comprises information relating to the pulse wheel, which is sequentially the most recent~~latest~~ information ~~disposed~~ to be processed by the controller.
12. (Currently Amended) The method of claim 10, wherein the second information pulse comprises information relating to the pulse wheel, which is sequentially not the most recent~~latest~~ information ~~disposed~~ to be processed by the controller, but occurs prior in time to the most recent~~latest~~ information.
13. (Cancelled)
14. (Currently Amended) The method of claim 10, wherein the controller is an engine control unit.

15. (Currently Amended) The method of claim 10, wherein the first information pulse providesis phase angle information sensed by the sensor out of the pulse wheel.
16. (Currently Amended) The method of claim 10, wherein the second information pulse providesis phase angle information sensed by the sensor out of the pulse wheel.
17. (Currently Amended) The method of claim 10, wherein the rotating shaft is a cam-shaft of an internal combustion engine.
18. (Currently Amended) The method of claim 10, wherein the rotating shaft is a crank-shaft of an internal combustion engine.
19. (Currently Amended) The method of claim 10, wherein the pulse wheel comprises a wheel having teeth distributed thereon.